ABSTRACT OF THE DISCLOSURE

The invention relates to a novel methodology and apparatus for clock-offset compensation and common-phase offset correction in Frequency Division Multiplixing based wireless local area network (WLAN) environment, such as an Orthogonal Frequency Division Multiplexing (OFDM) environment. A curve fit, such as a threshold-based, least mean squares (LMS) fit of phase of the pilot sub-carriers in each OFDM symbol is used to estimate and counteract the rotation of the data sub-carriers due to residual frequency offset, low frequency phase noise, and clock offset. The invention is particularly well suited to wireless channels with multipath where pilots typically undergo frequency-selective fading. The thresholding LMS is implemented in a hardware-efficient manner, offering cost advantages over a weighted-LMS alternative. Additionally, the invention uses a unique phase-feedback architecture to eliminate the effects of phase wrapping, and avoid the need to refine channel estimates during packet reception.